# Alg. 2 – Unit 4 – Algebra behind Parabolas

## Day 1 - Greatest Common Factors and Factor by Grouping

Objectives: SWBAT factor out a Greatest Common factor from polynomials
SWBAT to identify polynomials that are prime
SWBAT factor by Grouping
SWBAT solve Quadratic Equations

**GCF** –

**PRIME** –

**Find the greatest common factor**

**1)** $-6 \; and \; -15$ **2)** $16x, \; 24x \; and \; 36x$ **3)** $3x^2 \; and \; 12x$

**Factor out the greatest common factor**

**4)** $6x - 14$ **5)** $7x^2 - 28x + 14$ **6)** $-4x^2y - 6xy^2$

**Zero Product Property**

**Finding the Z.A.R.S.**

**Zeros** **Answers** **Roots** **Solutions**

**Use the zero product property to solve the following equations.**

**7)** $(x + 3)(x - 5) = 0$ **8)** $5z^2 - 30z = 0$ **9)** $4a^2 = a$

## Factor by Grouping

**10)** $x^2 - 3x + 4x - 12$ **11)** $ab + bc + a + c$ **12)** $3x^2 + 3xy - 2xy - 2y^2$

**Solve the following polynomials.**

**13)** $4m + 12m^2 + 3m + 9 = 0$ **14)** $7t^2 - 21t + 8t = 24$

# Homefun: Day 1 Problem Set

# Day 2 – Factoring and Solving Trinomials

Objectives: SWBAT factor Trinomials when $a \neq 1$
SWBAT solve Trinomials when $a \neq 1$

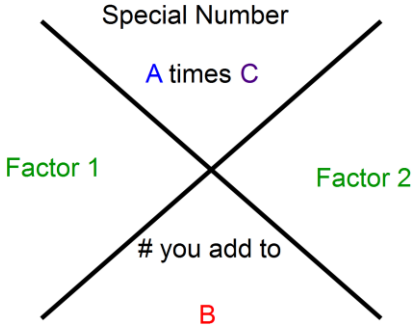
## Standard Form–

**Identify the a, b, and c of each polynomial.**

**1)** $-3x^2 + 17x + 10$ **2)** $x + 2x^2 - 15$

## Factoring Trinomials–

$ax^2 + bx + c$




$ax^2 + factor_1x + factor_2x + c$

**Factor the following expressions.**

**6)** $2x^2 + x - 15$

**8)** $6x^2 + 21x + 15$

**Solving trinomials when $a \neq 1$**

**Solve the following.**

**10)** $60y^2 - 85y - 25 = 0$

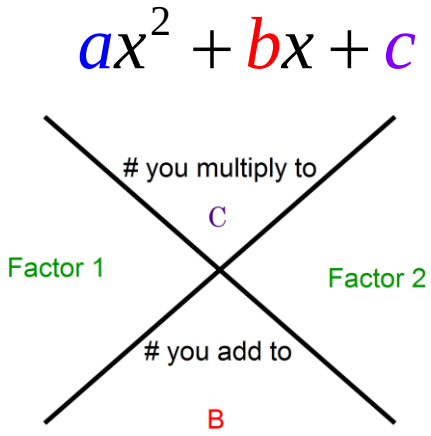
**11)** $30 - 12w = 5w - 2w^2$

## Homefun: Day 2 Problem Set

## Day 3 – Factoring and Solving Trinomials when a = 1

Objectives: SWBAT factor Trinomials when $a = 1$
SWBAT solve Trinomials when $a = 1$
SWBAT identify and use special factoring patterns.

**X Method**




**Factoring trinomials**

**1)** $x^2 + 13x + 36$

**2)** $-x^2 + 6x + 7$

## Solving trinomials when $a = 1$

**Solve the following.**

**3)** $x^2 - 14x - 72 = 0$

**4)** $21x + x^2 = -38$

## Special Factoring Patterns

**Difference of Two Squares:** $a^2 - b^2 = (\_\_\_)(\_\_\_\_)$ **Example:** $x^2 - 4 =$

**5)** $x^2 - 25$ **6)** $9x^2 - 25$ **7)** $4x^2 + 36$ **8)** $2x^2 = 50$

# Homefun: Day 3 Problem Set

# Day 5 – Solving Equations with Square Roots

Objectives: SWBAT Solve Quadratic Equations using Square Roots

## Solving Equations with Square roots

**1)** $4x^2 = 128$

**2)** $-2x^2 + 5 = 93$

**3)** $2x^2 - 16 = 34$

**4)** $2(x-8)^2 = 200$

**5)** $-3(x-1)^2 - 9 = 0$

**6)** $\frac{(2x-1)^2}{7} - 1 = 6$

## Homefun: Day 5 Problem Set

## Day 6 – Quadratic Formula

Objectives: SWBAT Solve Quadratic Equations using the Quadratic Formula

**Quadratic Formula–**

**Solve the following equations using the Quadratic formula.**

**1)** $x^2 + 12x + 35 = 0$

**2)** $-x^2 + 2x + 1 = 0$

**3)** $x^2 + 13 = 6x$

**4)** $3x^2 + 12x = -16$

**6)** $x^2 + 6x + 15 = 0$

**7)** $-x^2 + 7x - 25 = 17x + 2x^2$

## Homefun: Day 6 Problem Set

# Factoring Flow Chart